AMENDMENT TO THE SPECIFICATION

Please replace the first paragraph on page 6 with the following:

In one embodiment, ~~discloses~~ a reconstruction method which calculates a finite set of data to obtain a relationship between the calculations and a distribution of radioactivity from an object is provided. In one embodiment, the object may be a human or an animal having radioisotopes delivered internally for imaging. In another embodiment, the object may be a nuclear facility or a nuclear waste site in which the reconstruction method may determine the distribution of contaminates within the facility. In yet another embodiment, the object may be a missile, where a number of nuclear warheads on the missile may be determined.

Please replace the second complete paragraph on page 12 with the following:

The definition of the integrated cone-beam line-integral given in the Equation (22) and the surface integral given in Equation (2) may be compared for differences. First, there is a "r" radial weighting in the "dr" integral in Equation (2) that does not appear in Equation (22). This difference is significant because there is no simple way to obtain S (Φ, β, ψ) from S_{CB} (Φ, β, ψ) or vice versa. Secondly, the surface integral given in Equation (2) ~~there is~~ includes a *sin* ψ term that does not appear in the Equation (22). This leads to different values for these two integrals at $\psi = 0$. The surface integral at $\psi = 0$ equals zero. In this case, one data point may be known ahead of time. Furthermore, for the surface integrals, there may be an infinite number of significant digits. In contrast, at $\psi = 0$ the integrated cone-beam line-integral may not always equal to zero. In fact, if the axis of symmetry associate with the integral intersects the distribution, then the integral is equal to 2π times the line integral of the distribution along the axis of symmetry.

Please replace the last paragraph of page 15 with the following:

In one embodiment, a cross-section of a sphere 200 contains a distribution of radioactivity as illustrated in FIG. 3. Sphere 200 has a radius 201 with a value of R + ε. FIG. 3 also shows a sine-on-the-cylinder trajectory 202. The sine-on-the-cylinder curve may be defined as a geometry that may include two periods of a sinusoid that may have been wrapped around a cylindrical surface. In particular, the geometry may be described by a vector-valued function

$\Phi(\lambda) = (c_1 \cos \lambda, c_1 \sin \lambda, c_2 \sin 2\lambda)$ for $0 \leq \lambda \leq 2\pi$, where c_1 and c_2 may be selected so that a

completeness condition is satisfied. (Smith, 1990). Suppose a first detector moves about the sphere 200 along trajectory 202. An arbitrary <u>plane</u> may intersect the trajectory 2, 3, or, 4 times. For example, plane 203 intersects the trajectory 203 four times. A line (*e.g.*, line 204), normal to plane 203 at the intersection of the sine-on-the-cylinder trajectory 202, must have a second detector that intersects the line 204 in order to satisfy the surface integral completeness condition.